Acer AL1917 Service Guide

Service guide files and updates are available on the CSD web: for more information, Please refer to http: csd.acer.com.tw

Copyright

Disclaimer

Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen
Note	Gives bits and pieces of additional information related to the current topic.
Warning	Alerts you to any damage that might result from doing or not doing specific actions.
Caution	Gives precautionary measures to avoid possible hardware or software problems.
Important	Reminds you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. this Service Guide provides you with all technical information relating to the BASICCONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. please not WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide, for ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and Service of customer machines.

WARNING: (FOR FCC CERTIFIED MODELS)

NOTE: this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, Which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

WARNING

Use only shielded signal cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

As an ENERGY STAR® Partner our company has determined that this product meets the ENERG STAR® guidelines for energy efficiency.

WARNING:

To prevent fire or chock hazard, do not expose the monitor to rain or moisture. Dangerously high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

PRECAUTIONS

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, Swimming pool or in a wet basement.

- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacture or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacture and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet area provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel.
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100-240V AC, Min. 3.5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.
- For use only with the attached power adapter (output 12V DC) which have UL,CSA listed license

SPECIAL NOTES ON LCD MONITORS

The following symptoms are normal with LCD monitor and do not indicate a problem.

NOTES

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness in the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

Table of Contents

Monitor Features

Chapter 1

1.1 Test Conditions

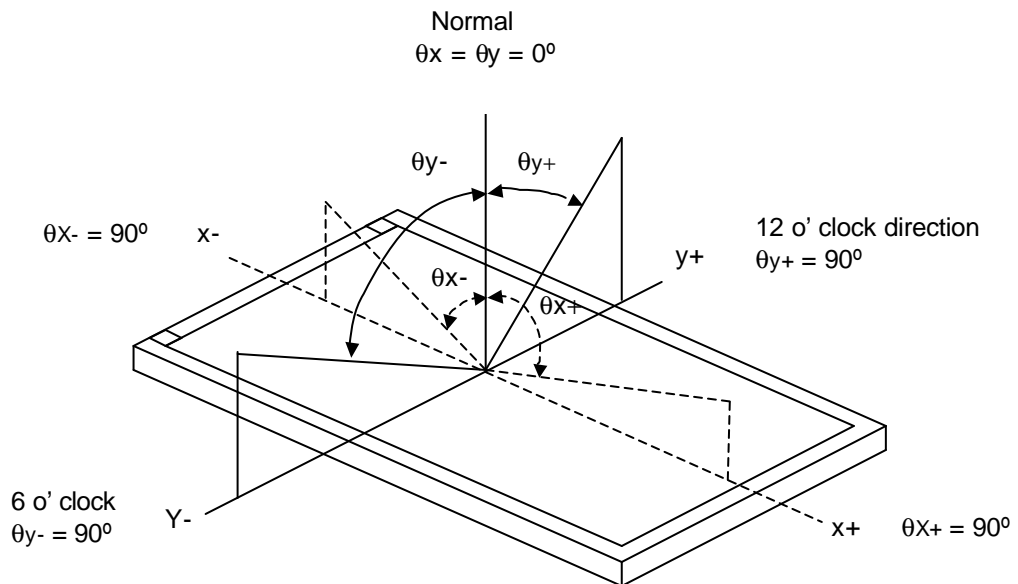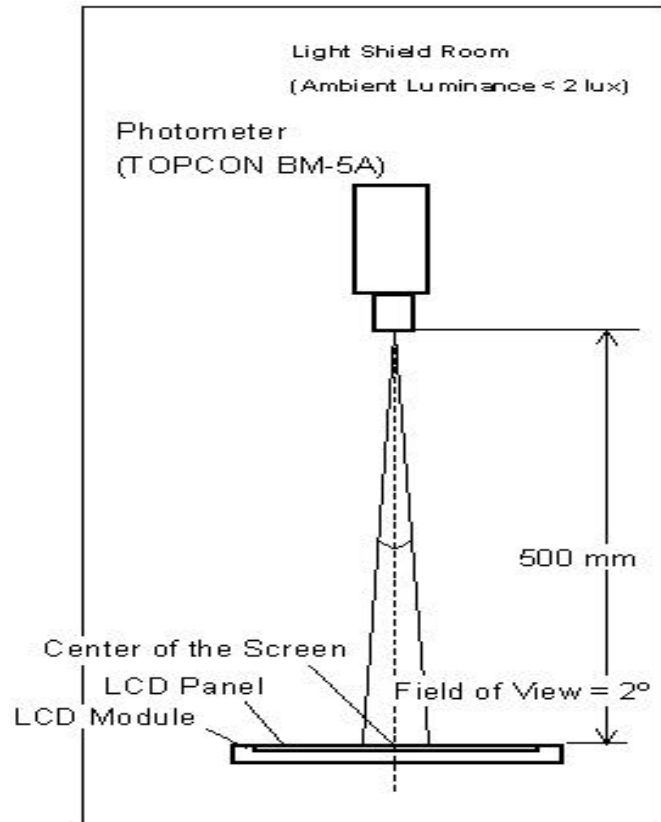| Item	Condition
Temperature	Normal room temperature (25±2)
Humidity	50±10%
AC input voltage	100V±2V, 120±2V, 60Hz / 240±2V, 50Hz
Brightness	Maximum with OSD setting
Contrast	Middle with OSD setting
Resolution setting	1280 x 1024 @60HZ
Color temperature	With OSD setting
Measuring instrument	Minolta CS-1000T Spectrometer and Photometer CA-210 or equivalent
Others	Before measuring, "Auto Adjust" & "Auto Balance" must be done in advance

1.2 Features

- 19" SXGA TFT LCD Panel
- TN Mode Liquid Crystal
- D-SUB/ DVI-D Input
- Audio Function (Optional)
- Support to 75Hz Refresh Rate
- Support VESA-DCC 2B plug & play function
- Support VESA-DPMS & DVI DMPM Power Management Function
- Wide Viewing Angle
- High Brightness & Contrast Ratio
- High Brightness & Contrast Angular Dependent
- Fast LC Response Time
- Light Weight

1.3 LCD panel Specification

Technical Specification

Item		Specification	Unit
LCD panel	Panel Model	M190E5-L0A	LCD panel
	Active Area	376.32 (H) x 301.056 (V) (19.0" diagonal)	
	Driver Element	a-si TFT Active Matrix	
	Pixel Number	1280 x R.G.B. x 1024	
	Pixel Pitch	0.294 (H) x 0.294 (V)	
	Pixel Arrangement	RGB Vertical Stripe	
	Display Color	16.2M	
	Tran missive Mode	Normally White	
	Viewing Angle (H / V)	Typical 150 / 130	
	Brightness	Typical 280	
	Contrast Ratio	Typical 400	
	LC Response Time (Tr+Tf)	8 (Tr: 2 + Tf: 6)	
Graphic	Separate Sync.	TTL Level	Graphic
	Horizontal Sync.	Positive / Negative	
	Vertical Sync.	Positive / Negative	
	Input Connector	D-Sub mini 15 pins, DVI-D 24 pins	
Performance	Auto Adjust	Clock, Phase, H Position & V Position	Performance
	Screen Scaling	VGA/SVGA/XGA/SXGA Full Screen Display	
	Power Management	VESA DPMS, DVI DMPM, ENERGY STAR® Compliance	
	Color Adjustment	User, 6500K, 7500K & 9300K	
	OSD Language	English, French, German, Spanish, Italian, Japanese, Traditional Chinese, Simplified Chinese	
Power source Power consumption	Power Input	AC100~240 (Worldwide)	Power source
	Operation Mode	58	Power consumption
	Power Saving Sleep Mode	2W @230VAC 50Hz	
	Power Saving OFF Mode	1W @230VAC 50Hz	
Tilt angle	Upward / Downward	20 / -5	Tilt angle
Physical	Dimension, weight	410.1 x 425.5 x 189.6 (W x H x T), (4.5)	Physical
DCC	Plug & Play	DDC 2B Compliance	DCC
Function	Front key	5keys	Function
	Audio & Speaker	2.5 W x2	

(1)   Definition of Viewing Angle (θx, θy):

Light Shield Room
(Ambient Luminance < 2 lux)

Photometer
(TOPCON BM-5A)

500 mm

Center of the Screen
LCD Panel
LCD Module

Field of View = 2°

Normal
$\theta x = \theta y = 0^o$

$\theta y-$ $\theta y+$

$\theta X- = 90^o$ x-

12 o' clock direction
$\theta y+ = 90^o$

y+

$\theta x-$

$\theta x+$

6 o' clock
$\theta y- = 90^o$ Y-

x+ $\theta X+ = 90^o$

(2)   Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression and figure below.

Contrast Ratio (CR) = L255 / L0

L255: Luminance of gray level 255

L 0: Luminance of gray level 0

CR = CR (5)

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (5).

Definition of luminance measured points and Brightness Uniformity:

Horizontal Line Number [pixel]

Active area
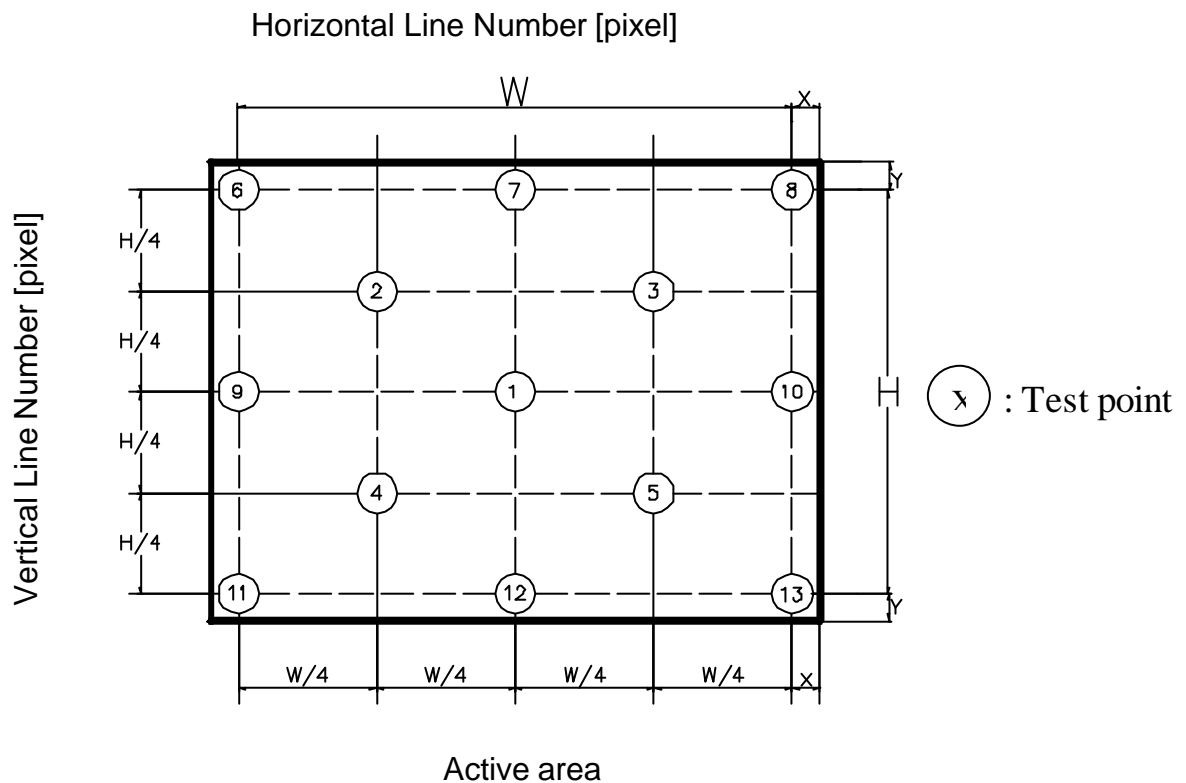
Delta X=17.0mm;Delta Y=17.0mm

Luminance of center point: L=L (1)

Brightness Uniformity Measurement points: Five specified points 1-5

Formula: Maximum [L (1), L (2), L (3), L (4), L (5), L (6), L (7), L (8), L (9), L (10),

L (11), L (12), L (13)]/Minimum [L (1), L (2), L (3), L (4), L (5),

L (6), L (7), L (8), L (9), L (10), L (11), L (12), L (13)]

(3)   Definition of Response Time (T_R, T_F) and Measurement Method:
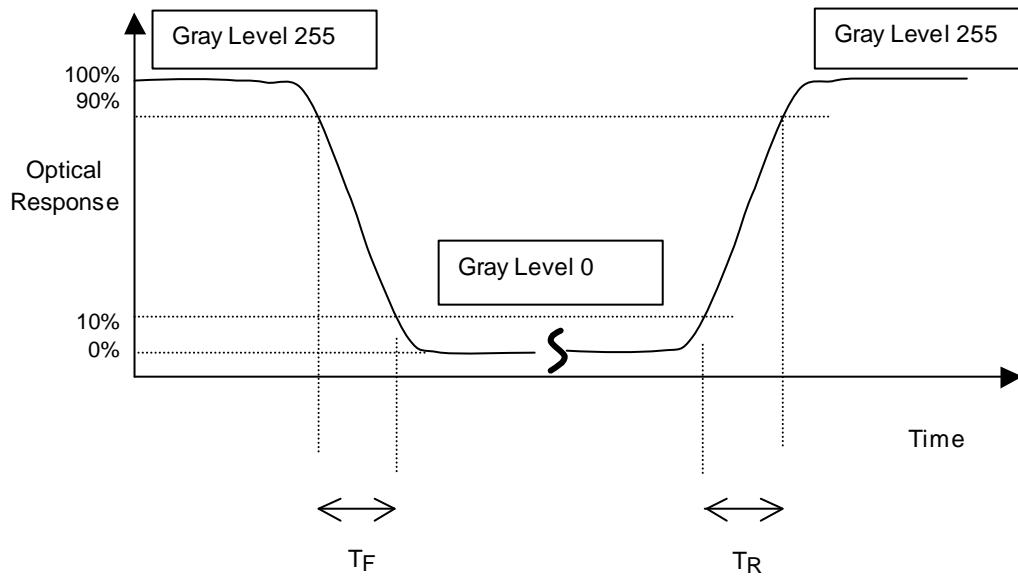
**(4) Luminance, Chromaticity and CCT Measurement**

Measurement System Setup:

The LCD module should be stabilized at given temperature for 15 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 15 minutes in a windless room.
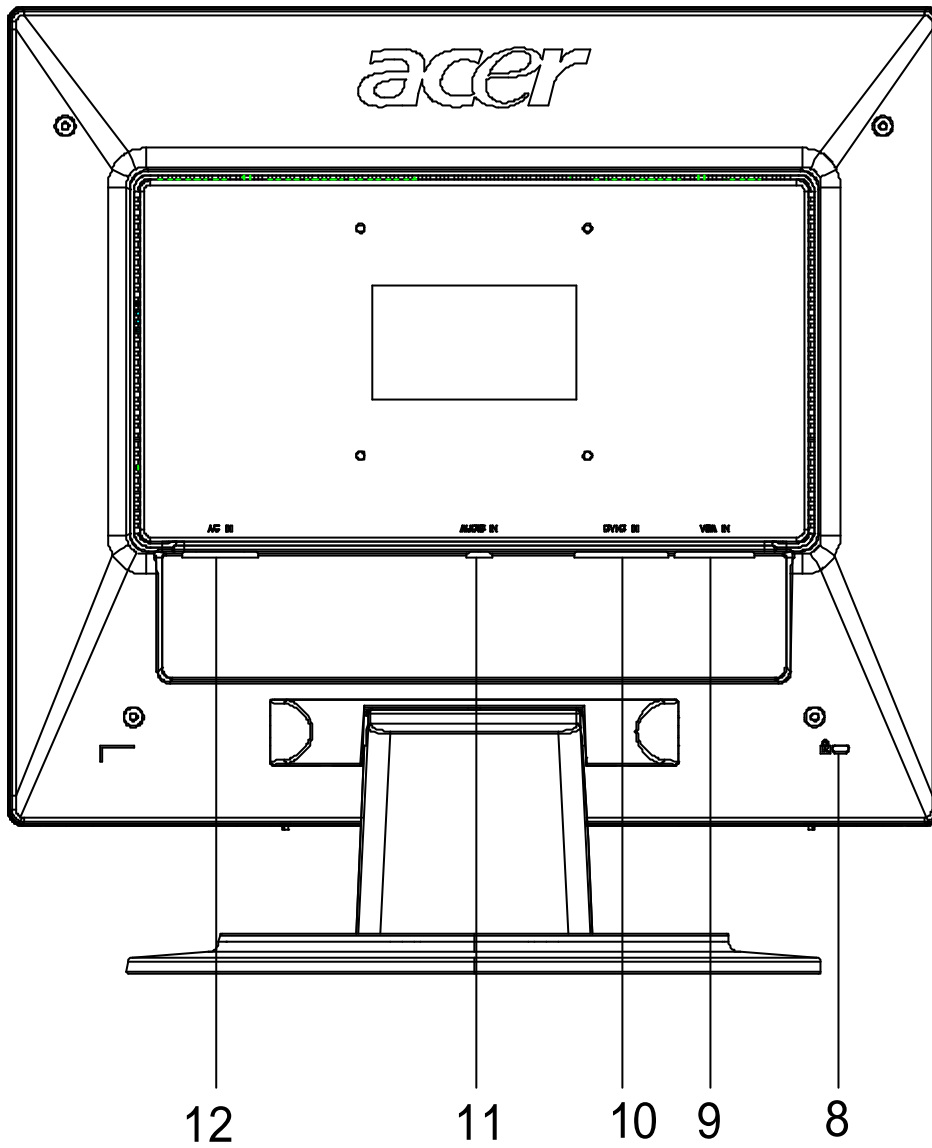
Chapter 2
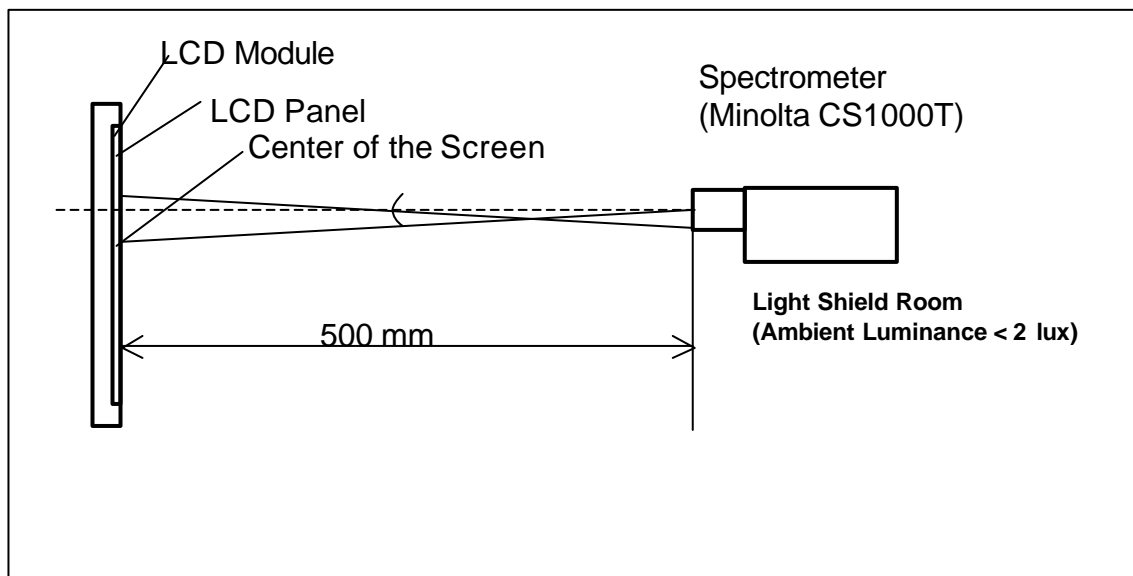
2.1 Function Name

2.1.1 Front
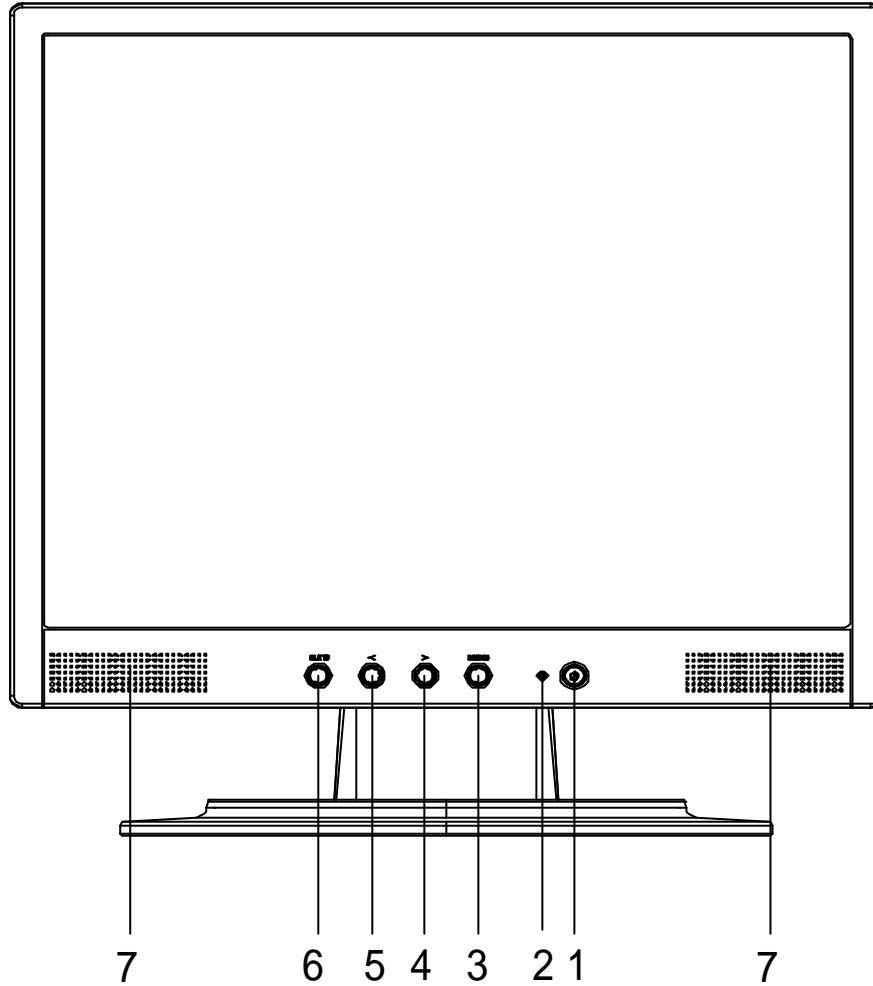
| No.	Name	Descriptions	
1	Power Switch	Power On/Off	
2	LED Indicator	Green	Normal operation
		Orange	Power management
3	MENU	OSD control MENU button	
4	>	Right selection/ Volume button	
5	<	Left selection/ Volume button	
6	AUTO	Adjust Clock, Phase, H Position and V Position automatically	
7	Speaker	2.5W x 2	

2.1.2 Back

No.	Name	Descriptions
8	Lock hole	Kensington
9	D-Sub	D-sub mini 15pin Connector
10	DVI-D IN (Optional)	24 pin connector
11	Audio IN (Optional)	Phone Jack 3.5
12	AC-In	AC Power Jack

2.2 OSD Menu Description
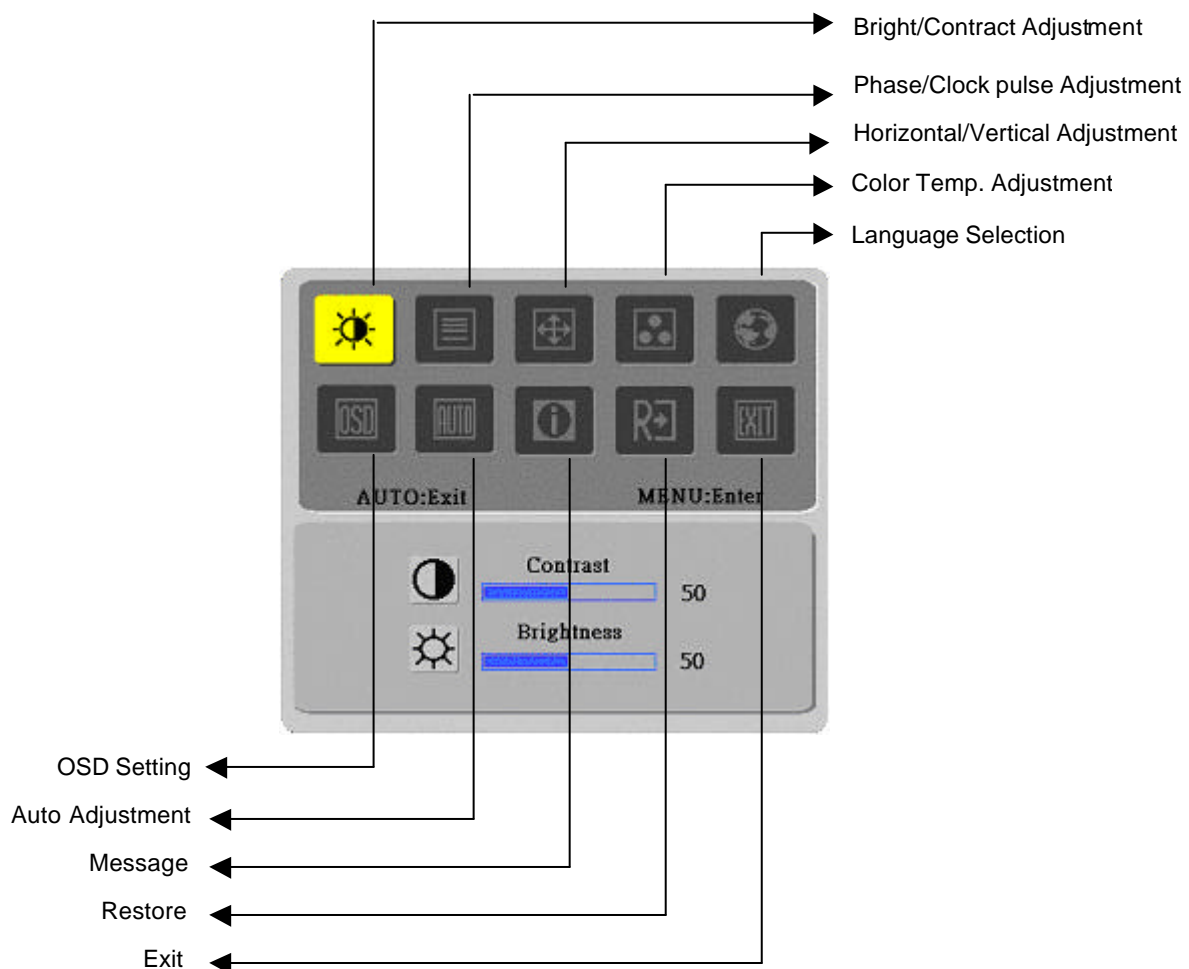
1. **Power:** Press this key to control power ON/OFF of the Monitor.

    Green: normal display.

    Orange flicker: no signal input.

    Orange: power off.

2. **Auto/Exit:** When the input signal source is PC, used to execute auto adjustment

3. **< >:** Press this button for selection or adjustment when OSD is shown.

4. **+/☼ :** Used to select the OSD function; when there is OSD menu, used to increase

    function value.

    Enter brightness control function directly when there is no OSD menu.

5. **—/◑:** Used to select the OSD function; when there is OSD menu, used to decrease

    function value.

    Enter contract control function directly when there is no OSD menu.

6. **Menu**: Use to display OSD menu; when there is OSD menu, used to execute OSD

    function or enter next layer of OSD menu; if executing OSD function, exit OSD

    function and save the value adjusted.

| AUTO | < | > | MENU | POWER |
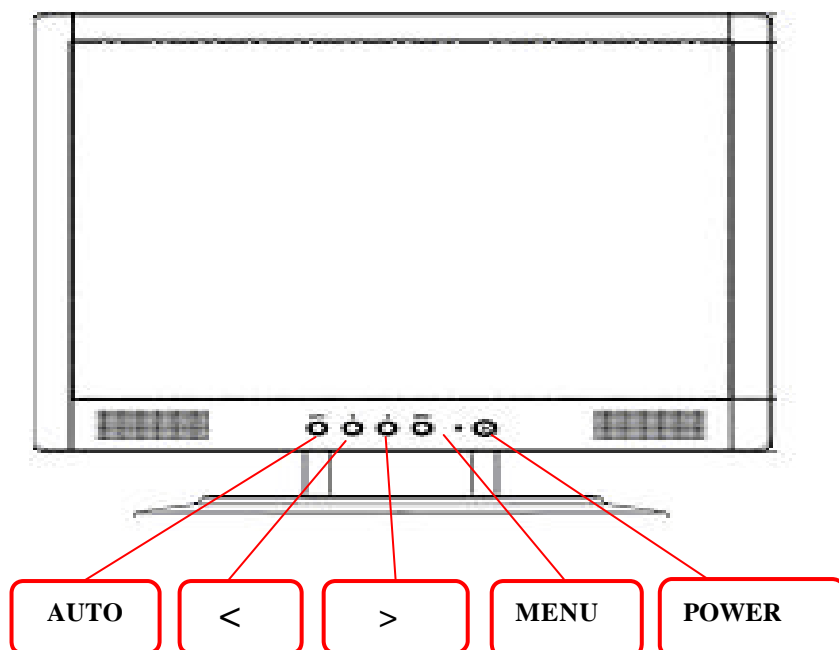
2.3 OSD Control

1. Click MENU to display the OSD window as shown in the following figure.
2. Click < or > to select the function to be adjusted as shown in the following figure.
3. Click the MENU to select the function to be adjusted.
4. Click < or > to change current settings.
5. To exit OSD, select "EXIT" to close the OSD window and save changes. To change other settings, repeat steps 2-4.

2.4 OSD Menu Screen

- Bright/Contract Adjustment
- Phase/Clock pulse Adjustment
- Horizontal/Vertical Adjustment
- Color Temp. Adjustment
- Language Selection
- OSD Setting
- Auto Adjustment
- Message
- Restore
- Exit

◆ The OSD disappears several seconds after you stop pressing the buttons while performing an adjustment.

◆ Any changes are automatically saved in the memory when the OSD disappears. Turning off the power should be avoided while using the menu.

◆ Adjustments for clock, phase and positions are saved for each signal timing. Except for these adjustments, all other adjustments have only one setting, which applies to all signal timings.

◆ The color will change from white to pink while the function is selected.

2.5 OSD Function Definition

Primary Directory Symbol	Secondary Directory Symbol	Secondary Directory Items	Description
☀	◐	Contrast	Adjust the contrast between the foreground and background of an image on the screen
	☼	Brightness	Adjust the background brightness of the screen
▤	▤	Phase	Adjust the focus of the image (for analog input adjustment only)
	▥	Clock Pulse	Adjust the clock pulse of the image (for analog input adjustment only)
⊕	▯	Horizontal	Move the image left and right on the screen (for analog input adjustment only)
	▱	Vertical	Move the image up and down on the screen (for analog input adjustment only)
⊡	N/A	Warm Color Temp.	Set up the color temp. to be warm white color
	N/A	Cold Color Temp.	Set up the color temp. to be cold white color
	R	User Definition/Red	
	G	User Definition/Green	Adjust red/green/blue gain
	B	User Definition/Blue	
🌐	N/A	**English**	
	N/A		
	N/A	**Deutsch**	Select the language you want
	N/A	**Francis**	
	N/A	**Espanola**	
	N/A	**Italian**	
	N/A	**? ? ? ?**	
	N/A		
OSD	⊡	Horizontal	Move OSD left and right
	▤	Vertical	Move OSD up and down
	🕘	OSD Time Display	Adjust OSD time display settings
AUTO	N/A	Auto Adjustment	Set up horizontal, vertical, sequence and focus automatically (for analog input only)
⌨	N/A	Analog Digital	Select the input source you want (for DVI Input only)
ⓘ	N/A	Message	Display resolution, H/V frequency and the input port used for current input timing function
R⊐	N/A	Restore	Restore to factory settings
EXIT	N/A	Exit	Close the OSD window and save changes

18

2.6 Plug and Play

◆ The new **VESA Plug and Play** function is used which eliminates the complicated and time-consuming installation process.

◆ You can use the **Plug and Play** system without encountering usual installation problems. Your computer system can easily identify and automatically adjust the monitor.

◆ The LCD Monitor uses **Display Data Channel (DDC)** to send **Extended Display Identification Data (EDID)** to the computer system, so the computer system can be set to monitor auto adjust.

2.7 Power Saver

◆ Power control system, also called **(Power Saver)**, is installed inside the LCD Monitor.

◆ If the monitor has not been used for a certain period of time, the system will turn the monitor to low voltage mode to save power. Slight moving or any click will return to the original image.

◆ The VGA card inside the computer handles *Power Saver*. You can use computer software to set the function.

◆ The LCD Monitor is compatible with EPA ENERGY STAR and NÜTEK if used with a VESA DPMS computer.

◆ To save power, turn off the power of the LCD monitor when not in use.

MACHINE DISASSEMBLY AND ASSEMBLY

3.1 Disassembly Procedures

Picture	Description

	21

	22

	23

3.2 Assembly Procedures

	24

	26

	27

Troubleshooting

4.1 Abnormal Display Troubleshooting
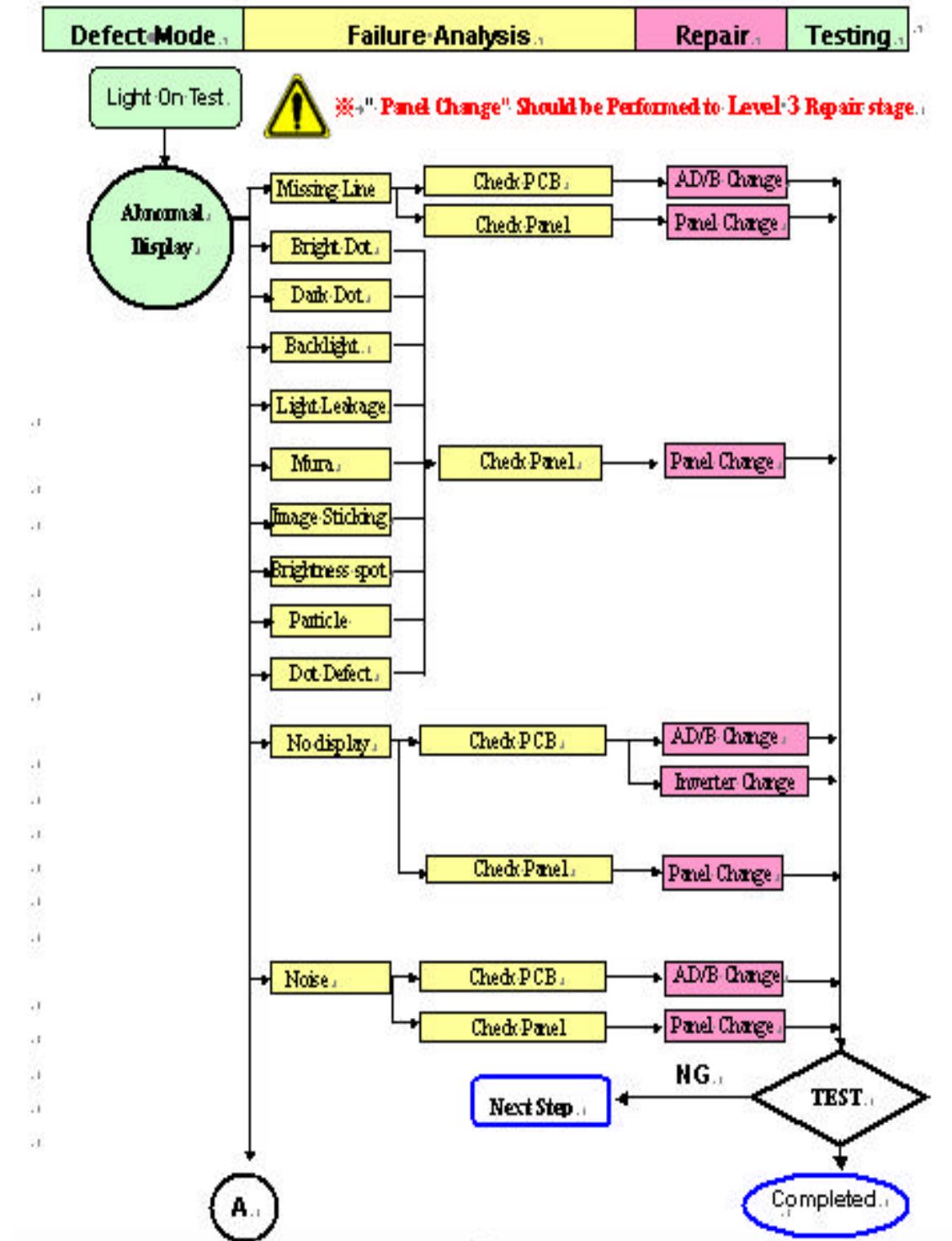
A

⚠ **"Panel Change" Should be Performed to Level 3 Repair stage.**

```
Flicker ──── Check PCB ──── AD/B Change
                        └── Inverter Change
        └──── Check OSD ──── Adjust VCOM

Gray value ──── Check PCB ──── AD/B Change
display    └──── Check Panel ──── Panel Change

R.G.B display ──── Check PCB ──── AD/B Change
abnormal
```

```
Display Shut ──── Check PCB ──── AD/B Change
Down                         └── Inverter Change
          └──── Check Panel ──── Panel Change

No signal ──── Check PCB ──── AD/B Change
```

```
Power on ──── Check PCB ──── AD/B Change
Display
abnormal
```

Next Step ◄──── **NG** ──── ◇ **TEST**

A

⬭ Completed
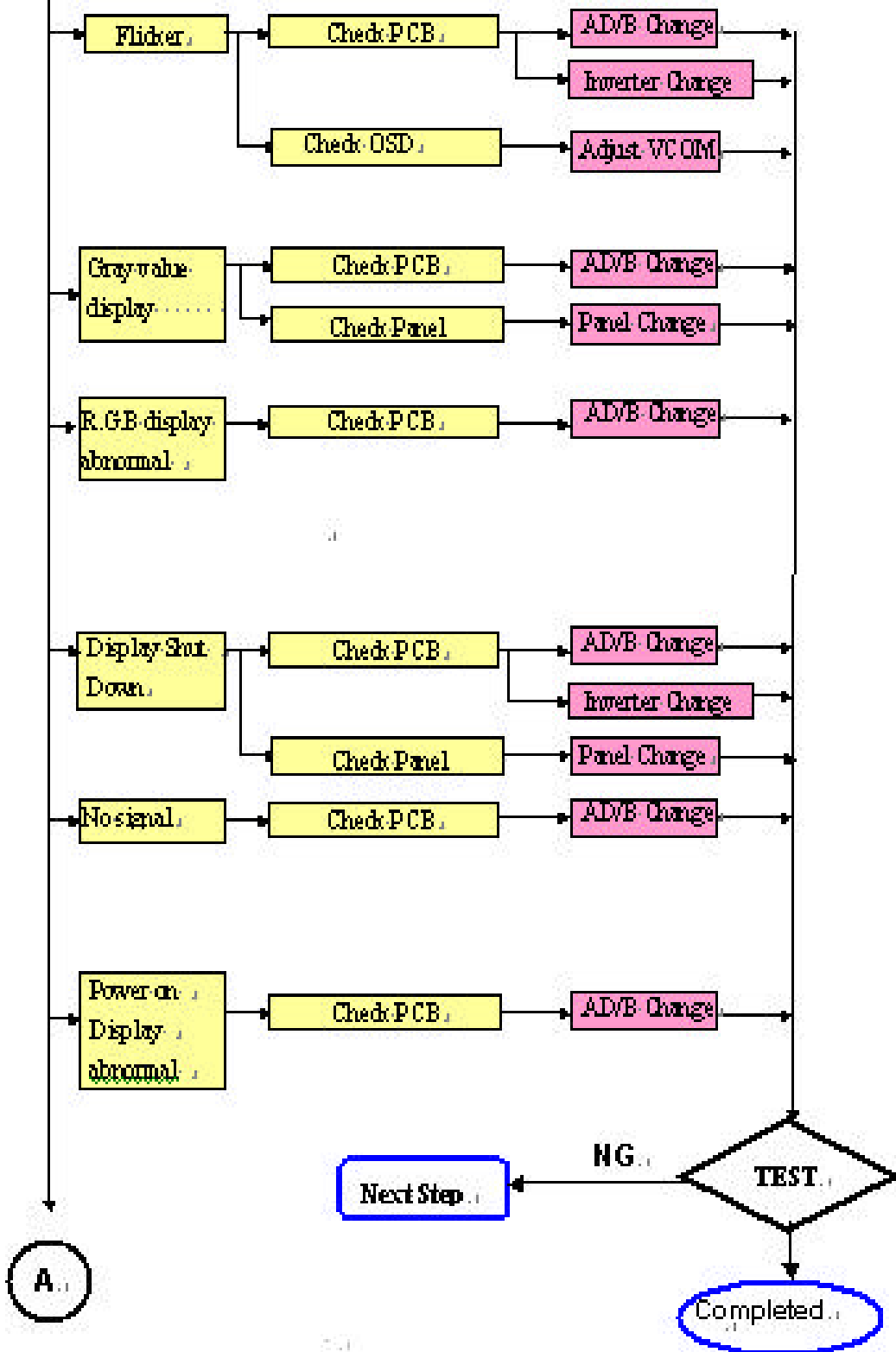
4.2 Abnormal (ON/OFF, LCD display, Keyboard) Troubleshooting
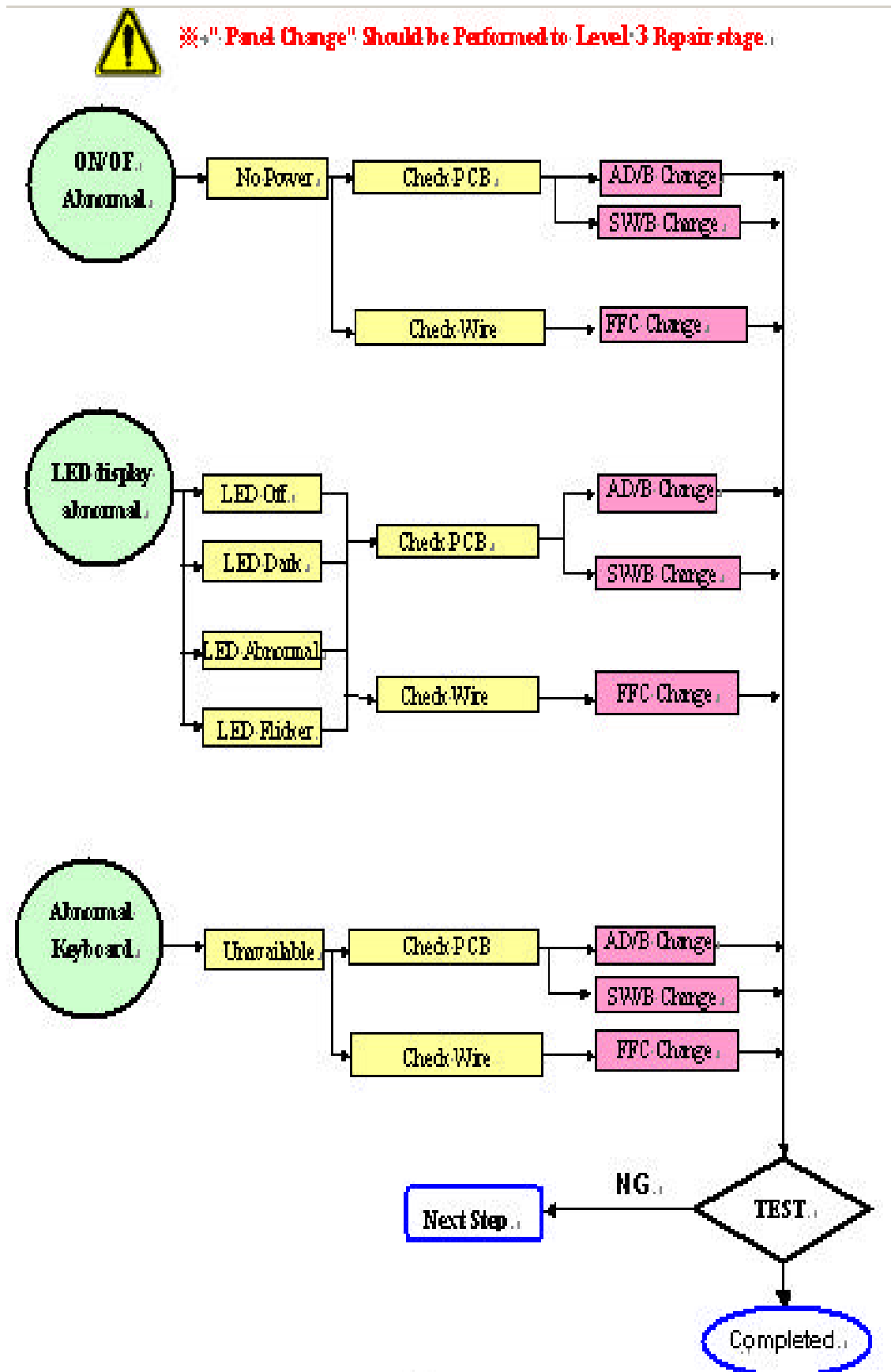
4.3 Abnormal (BIOS, OSD, Other Display) Troubleshooting

※ "Panel Change" Should be Performed at Level 3 Repair stage.
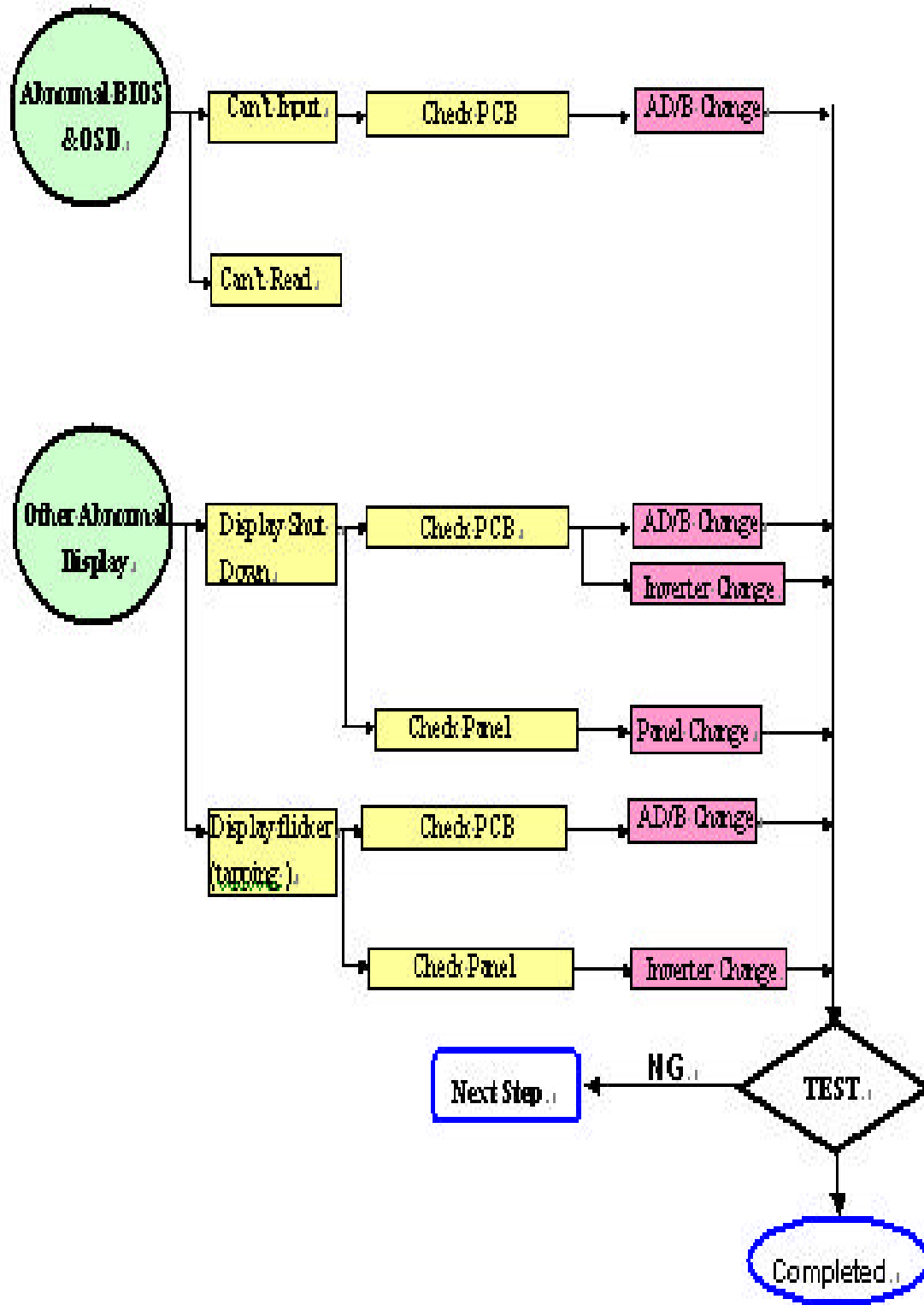
4.4 Audio Abnormal Troubleshooting

※ "Panel Change" Should be Performed at Level 3 Repair stage.

Audio Abnormal → Sound adjust abnormal → Check PCB → AD/B change

No sound → Check speaker → Speaker change
Check FFC → FFC change

Single sound → Check PCB → AD/B change → SW/B change

Hear phone defect → Check hear phone Jack → SW/B change
Check wire → FFC change
Check PCB → AD/B change

TEST → Completed

Connector Information
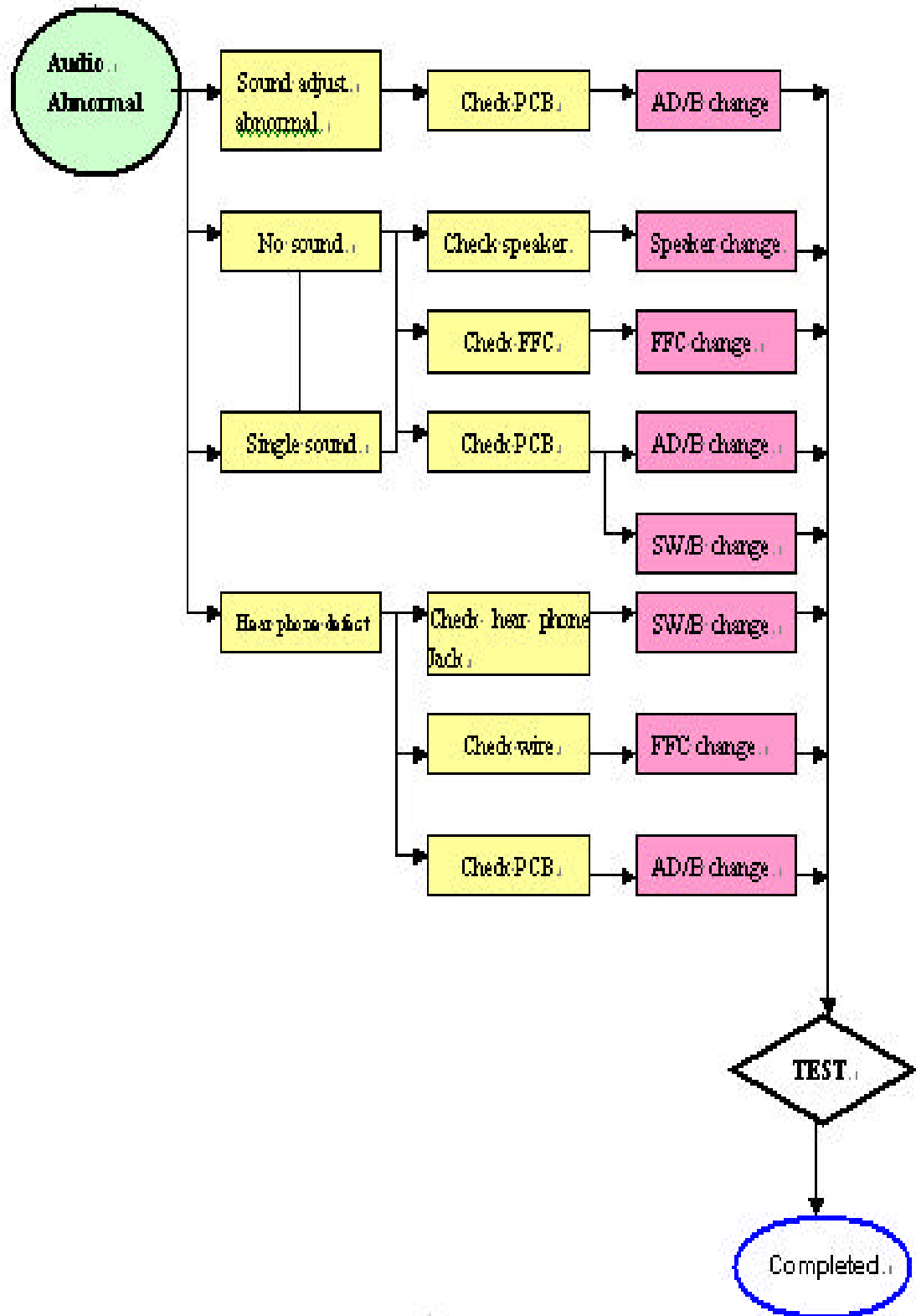
5.1 Function Block Diagram
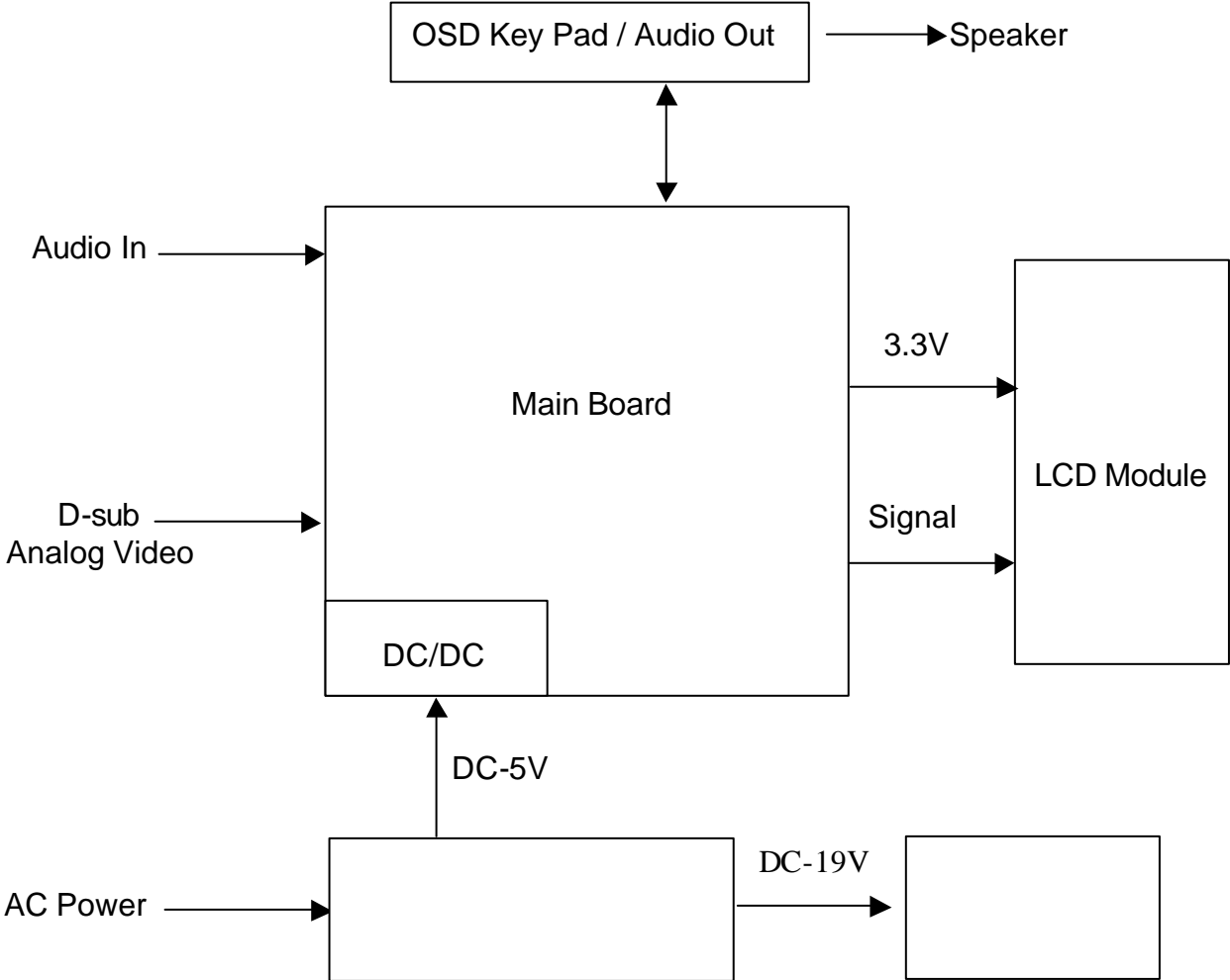
5.2 D-sub mini 15pin Connector

D - S U B
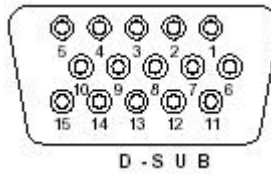
Pin No.	Pin Function	Pin No.	Pin Function
1	Red video input	9	NC
2	Green video input	10	Ground
3	Blue video input	11	No connection
4	NC	12	(SDA)
5	Ground	13	Horizontal sync (Composite sync)
6	Red video ground	14	Vertical sync
7	Green video ground	15	(SCL)
8	Blue video ground		

5.3 Audio Connector   Phone Jack, d=3.5mm

5.4 AC Connector   ac power jack

FRU (Field Replaceable Unit) List

Part List

Picture	Part name	Description	Vendor Part No.

		36	

Picture	Part name	Description	Vendor Part No.

| | | 37 | |

Explosion Diagram